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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,780	09/28/2001	Shahram Mihan	0050/49854	7113

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WASHINGTON, DC 20036

EXAMINER

LEE, RIP A

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 08/05/2003

60

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

09/937,780

Applicant(s)

MIHAN ET AL.

Examiner

Rip A. Lee

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--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED July 21, 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY** [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☐ The a) ☐ affidavit, b) ☐ exhibit, or c) ☐ request for reconsideration has been considered but does NOT place the application in condition for allowance because: \_\_\_\_\_.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: 11 and 12.Claim(s) objected to: 8 and 14.Claim(s) rejected: 1-7, 9 and 10.

Claim(s) withdrawn from consideration: \_\_\_\_\_.

8. ☐ The proposed drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_.
10. ☒ Other: attachment to advisory action

### **Attachment to Advisory Action**

1. This advisory action follows a response filed on July 21, 2003. The Application contains claims 1-12 and 14.
2. Claim 8 was indicated as containing allowable subject matter in Paper No. 6 (October 18, 2002), however, the claim status was changed inadvertently in Paper No. 8 (June 3, 2003). This was in error. Claim 14 was also rejected in Paper No. 8. The rejection of this claim was also in error (*vide infra*).

### ***Response to Arguments***

3. The Applicants traverse the rejection under 35 U.S.C. 103(a) as being unpatentable over Tani *et al.* in view of Badley *et al.* and Koehn *et al.* in view of Badley *et al.*

The Applicants submit that the notion of use of TAC-based chromium catalysts for copolymerization is not obvious in view of data submitted in Karol *et al.* (*J. Polym. Sci.* 1974). Here, Figure 13 shows that density decreased non-linearly with increasing comonomer content for C<sub>2</sub>/α-olefins polymerized in the presence of classical chromocene on silica (Cp<sub>2</sub>Cr/SiO<sub>2</sub>) catalysts. According to Applicants, use of the present catalyst results in minimal change in density when incorporating comonomer.

The Applicants argument and the experimental data has been considered fully, but they are not convincing. The application contains fifty-nine experiments demonstrating the scope of the invention, and the Applicants have managed to cull only two experiments (53 and 54) to support their claims. In run 53, ethylene is polymerized in the presence of

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(Do<sub>3</sub>TAC)CrCl<sub>3</sub>/MAO/SiO<sub>2</sub>. Run 54 illustrates a copolymerization of ethylene and 1-hexene in the presence of the same catalyst.

First, it is noted that the polymerizations are not performed under identical conditions. Notably, the Cr/Al ratio has changed significantly. Secondly, the examples are not compared with a standard. Regarding the data, one observes that the density has decreased as expected. While the change is claimed to be "minimal," the merit of this purported unexpected result can not be gauged by two experiments alone. A graph showing density as a function of comonomer incorporation which exhibits the claimed minimal density change, compared with the chromocene/SiO<sub>2</sub> system under similar reaction conditions, allows for a more meaningful comparison, and serves to rule out any notion that the two pieces of data proffered by Applicants do not fortuitously support their claims.

The Applicants may be correct in having indicated previously that copolymerization of olefins is less straightforward than the examiner suggests. Indeed, copolymerization is shown to be successful only for catalysts based on (Do<sub>3</sub>TAC)CrCl<sub>3</sub>. In this connection, it appears that the specification data is not commensurate in scope of the degree of protection sought by the present claims. The specification is devoid of results showing that all claimed and variegated transition metal complexes can be made into catalysts which effect the polymerization of ethylene copolymers having minimal density change.

In conclusion, the data of record is not of sufficient probative value to support a conclusion of nonobviousness. Therefore, the rejection of record has not been withdrawn.

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*Allowable Subject Matter*

4. Claims 11 and 12 are allowed. The claims are considered novel over the cited prior art because the references do not teach metal complexes containing triazacyclohexane compounds in which at least one of the *N*-bound substituents  $R^1$ - $R^3$  is different and because they do not disclose bridged triazacyclohexane metal complexes.

5. In correction of the error in the previous office action, claims 8 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (703)306-0094. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (703)308-2450. The fax phone number for the organization where this application or proceeding is assigned is (703)746-7064. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

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August 4, 2003



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